

Work Order ID 69977

Wednesday, May 25, 2011 9:03:58 AM



Page 1

Item ID: D206-667-147TRN

Accept



Setup Start



Revision ID:

Item Name: Crosstube Assembly, Mid Fwd

Stop



Start Date: 5/25/2011 Start Qty: 1.00



Cust Item ID:

Required Date: 6/24/2011 Req'd Qty: 1.00



Customer:

Reference:

Approvals:

Process Plan:

[Signature]

Date: 11-05-25

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Run Start



Stop



Sequence ID/
Work Center ID

Operation
Description

Set Up/
Run Hours

Tool ID

Tool #

Plan
Code

Accept
Qty

Reject
Qty

Reject
Number

Insp.
Stamp

Draw Nbr

Revision Nbr

D206-667-147

A

100

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Fill tube with sand & install plugs DTxxxx on both ends as per Folio FB029
2-Turn first side as per Folio FB029
3-File down transition lines smooth.

MM.L 11/06/21

110

0.00



QC1- Inspect dimensions to dimension sheet

QC

Memo

0.00

Quality Control

MM.L 11/06/22

120

0.00



MORI SEIKI CNC LATHE LARGE

Mori Seiki

Memo

0.00

Mori Seiki CNC Lathe Large

1-Turn second side as per Folio FB029
2-File down transition lines smooth.
3-Remove sand and plugs

MM.L 11/06/21

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

Resolution: _____ Disposition: _____ QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
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NOTE: Date & initial all entries

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Page 2

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Customer:

Reference:

Run Start



Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Stop



QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

130

QC1- Inspect dimensions to dimension sheet

0.00



QC

Memo

0.00

and 11/06/22

1

0

Quality Control

140

QC8- Inspect parts - second check

0.00



QC

Memo

0.00

SL 11/06/22

Quality Control

150

Crosstubes Chemical Conversion

0.00



HandFXtube

Memo

0.00

SAD
TW

11/06/24

Hand Finishing Crosstubes

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Cust Item ID:

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Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

QC:

Date:

SPC (Y/N):

Date:

Stop

Sequence ID/
Work Center IDOperation
DescriptionSet Up/
Run Hours

Tool ID

Tool #

Plan
CodeAccept
QtyReject
QtyReject
NumberInsp.
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

SAD 11-06-24

①

170

Packaging

0.00



Packaging

Memo

0.00

Packaging

Identify and stock in kanban rack

Location: LANQING

Gear

SAD 11-06-24

①

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/6/27
ME
11-06-24

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Picklist Print

Wednesday, May 25, 2011 9:04:04 AM

Page 1

Work Order ID: 69977



Parent Item: D206-667-147TRN



Parent Item Name: Crosstube Assembly, Mid Fwd



Start Date: 5/25/2011

Required Date: 6/24/2011

Start Qty: 1.00

Required Qty: 1.00

Comments: IPP rev:A 11.01.06 new issue DD verf:EC

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
D6002-115 		Manufactured	No			100	Each	31.0000	1	1			
Crosstube Material													

Location

Loc Qty

Loc Code

LG

31

34684

1

34776

30

man, L 11/06/20

W/O:		WORK ORDER CHANGES					
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DART AEROSPACE LTD		Work Order: 09977
Description: Crosstube Assembly		Part Number: D 206-262-147
Inspection Dwg:	Rev: A	Page 1 of 1

FIRST ARTICLE INSPECTION CHECKLIST

Inspection Sheet Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
SIDE A					Vern	JF-01
	2.240	+0.005	2.245	✓	"	
	1.984	+0.005	1.989	✓	"	
	2.014	+0.005	2.022	✓	"	
	2.058	+0.005	2.063	✓	"	
	2.097	+0.005	2.102	✓	"	
	2.136	+0.005	2.141	✓	"	
	2.176	+0.005	2.181	✓	"	
	0.125	±0.010	.130	✓	Vern	JF-01
	4.436	±0.030	4.440	✓	"	
	R0.063	±0.010	0.063	✓	RG	
	R2.00	±0.030	2.00	✓	"	
	R0.063	±0.010	.063	✓	"	
SIDE B						
	2.240	+0.005	2.245	✓	Vern	JF-01
	1.984	+0.005	1.989	✓	"	
	2.014	+0.005	2.022	✓	"	
	2.058	+0.005	2.063	✓	"	
	2.097	+0.005	2.101	✓	"	
	2.136	+0.005	2.141	✓	"	
	2.176	+0.005	2.181	✓	"	
	0.125	±0.010	.130	✓	Vern	JF-01
	4.438	±0.030	4.440	✓	"	
	R0.063	±0.010	0.063	✓	RG	
	R2.00	±0.030	2.00	✓	"	
	R0.063	±0.010	0.063	✓	"	
	99.84	±0.020	99.84	✓	tape	mm.t-02

Measured by: M.M. Wong	Audited by: SL	Preliminary Approval:
Date: 11/06/21	Date: 11/06/22	Date:

Rev	Date	Change	Revised by	Approved
B	10.04.14	Added preliminary approval	KJ	

10.04.15

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NOTE: Date & initial all entries

Item	Qty -147	Part Number	Description
1	X	D206-667-147	CROSSTUBE ASSEMBLY (206L MID FWD)
2	1	D6002-115	CROSSTUBE
3	2	D2873-043	NUT PLATE
4	2	D2873-045	NUT PLATE
5	2	D2891-1	SUPPORT
6	4	D3595-063-395	RUBBER CUSHION
7	4	MS21920-20	CLAMP (OR MS21920-21)
8	14	MS20601AD4W8	RIVET (OR NAS9302B-4-8)
9	A/R	MAGNOBOND 6398	ROCKWELL SPECIFICATION RBO-120-023 ADHESIVE (TEXTRON/BELL SPEC. 299- 947-100, TYPE II, CLASS 2 ADHESIVE)

GENERAL NOTES:

- 1) MATERIAL: MANUFACTURED FROM D6002-115
FINISHED LENGTH = 99.84±0.020
- 2) FINISH: CHEMICAL CONVERSION COAT PER DART QSI 005 4.1
PRIME INSIDE AND OUTSIDE PER DART QSI 005 4.2
PAINT OUTSIDE PER DART QSI 005 4.2
- 3) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED.
- 4) UNITS: INCHES UNLESS OTHERWISE NOTED.
- 5) BREAK SHARP EDGES: 0.005 TO 0.010 MAX.
- 6) IDENTIFICATION: SCRIBE DART PART NUMBER "D206-667-147" AND BATCH NUMBER ON
INSIDE OF CUFF PER DART QSI 044 6.4 (VIBRATING STYLUS).
- 7) WEIGHT: 15.0 lbs (-507 = 12.84)
- 8) PART IS SYMMETRIC ABOUT CENTERLINE.
- 9) RUN CUTTER OFF PART WHERE INDICATED. BLEND OUT EDGE LONGITUDINALLY,
TRANSITION SHOULD BE SMOOTH.
- 10) BEND PROGRESSIVELY WITH A MINIMUM OF 10 PASSES. MAXIMUM TUBE FLATTENING DUE
TO BENDING IS 6% BASED ON O.D.
- 11) LIQUID PENETRANT INSPECT OUTSIDE SURFACE OF CROSSTUBE PER QSI 038.
- 12) INSTALL D2891-1 SUPPORT USING 0.03" TO 0.06" THICK LAYER OF MAGNOBOND 6398 PER QSI
015. LET CURE FOR 12 HOURS AFTER INSTALLATION AND PRIOR TO PACKAGING.
- 13) INSTALL MS21920-20 CLAMPS (OR -21) WITH D3595-063-395 RUBBER CUSHIONS TO SECURE
THE D2891-1 SUPPORT ON TOP SIDE OF THE CROSSTUBE. ENSURE CLAMP MECHANISMS
ARE LOCATED ON CROSSTUBE SUPPORTS.
- 14) EXTREME CARE MUST BE TAKEN TO PROTECT THE OUTSIDE SURFACE OF THE TUBE. THE
OUTSIDE SURFACE MUST BE SMOOTH AND FREE FROM SURFACE DEFECTS SUCH AS
SCRATCHES, NICKS, OR DENTS. DEFECTS UP TO 0.005" MAY BE BLENDED OUT
LONGITUDINALLY. CIRCUMFERENTIAL GRIND MARKS ARE UNACCEPTABLE.
- 15) TORQUE CLAMPS 80 TO 100 IN-LB. ENSURE AT LEAST 1.5 THREADS ARE SHOWING IN
SAFETY AND THAT NUT HAS NOT BOTTOMED-OUT AFTER TORQUING.

SHOP CO
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. 69977
11-05-25

RELEASED
2011-05-25
JW

A	NEW ISSUE	DESCRIPTION	CP	10.11.23
REV.			BY	DATE
DESIGN				
DRAWN				
CHECKED				
MFG. APPR.				
APPROVED				
DE APPR.				
DATE	10.12.23			

DART AEROSPACE LTD HAWKESBURY, ONTARIO, CANADA	
DRAWING NO. D206-667-147	REV. A SHEET 1 OF 4
TITLE CROSSTUBE ASSY (206L MID FWD)	SCALE NTS
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W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

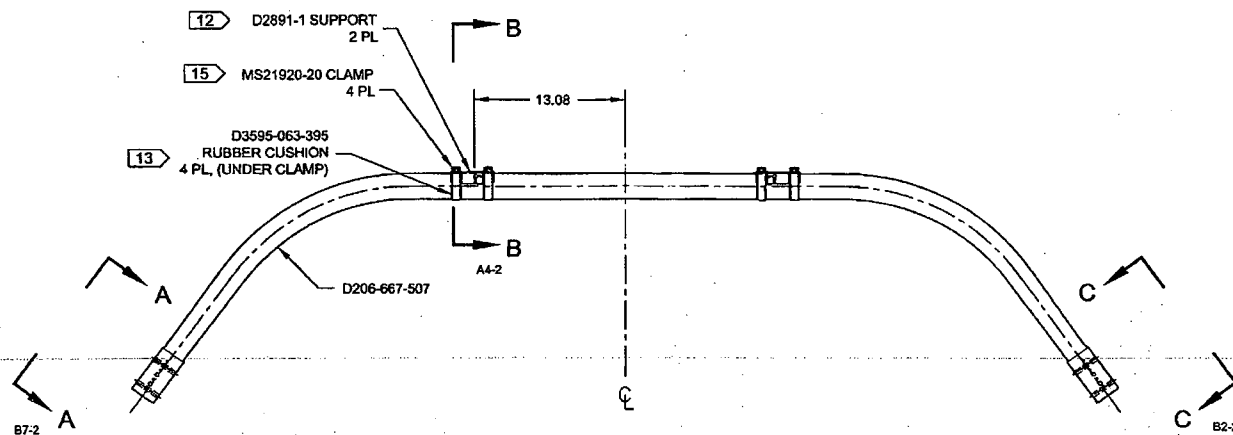
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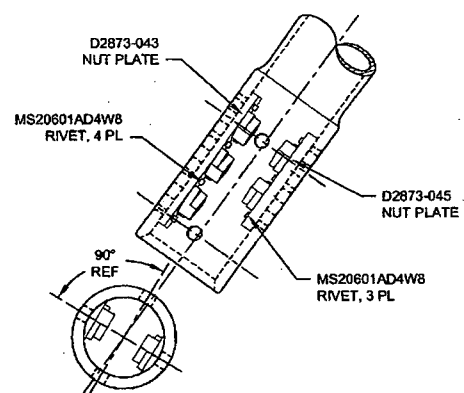
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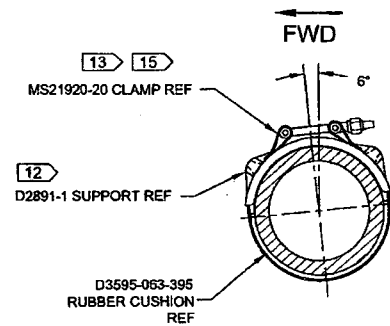
W069977

RELEASED
2011-05-24

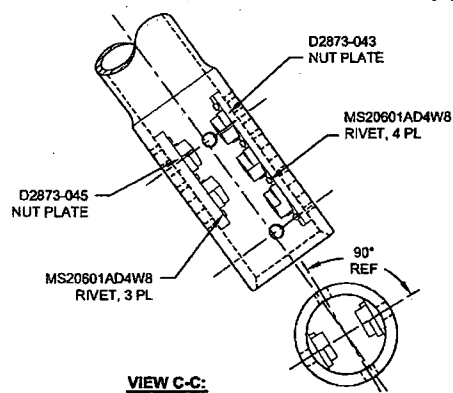
D206-667-147
ASSEMBLY DETAIL
(VIEW LOOKING FWD)



VIEW A-A:
CUFF DETAIL
SCALE 4X



SECTION B-B
SCALE 5X



VIEW C-C:
CUFF DETAIL
SCALE 4X

DESIGN	99	DART AEROSPACE LTD	
DRAWN	99	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D206-667-147	SHEET 2 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID FWD)	NTS
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8 7 6 5 4 3 2 1

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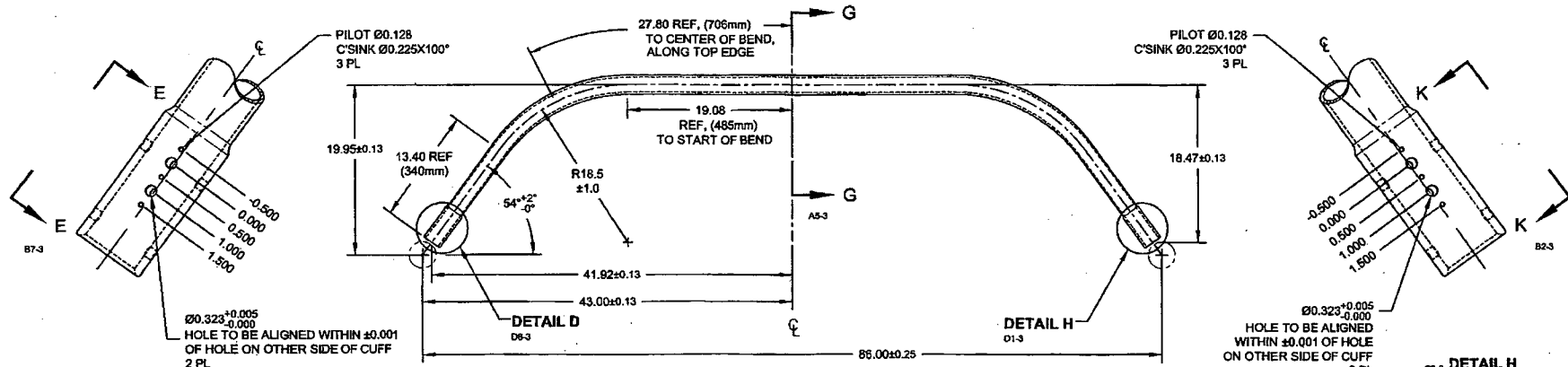
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8 7 6 5 4 3 2 1

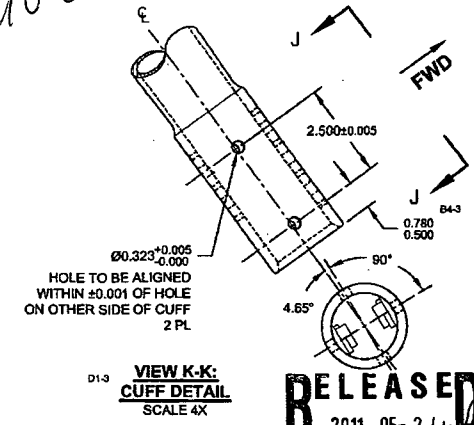
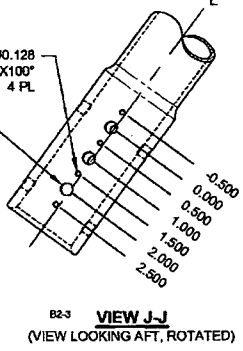
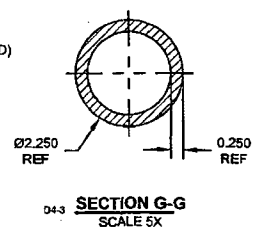
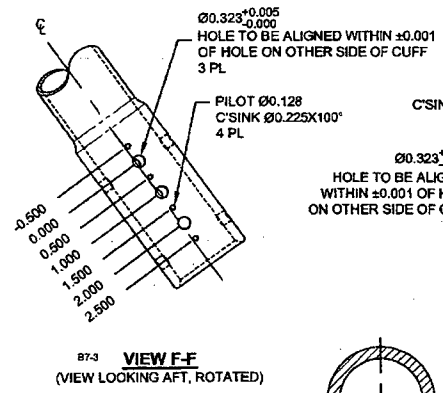
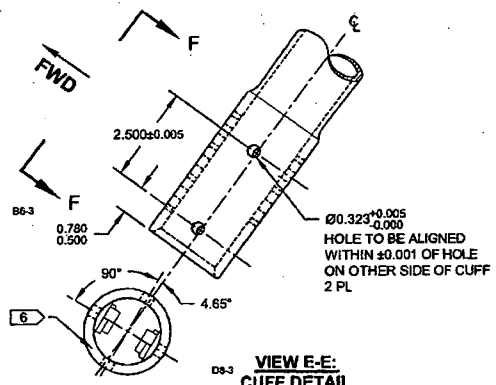


DETAIL D
SCALE 4X
(VIEW LOOKING FWD)

D206-667-507
BENDING AND DRILLING DETAIL
(VIEW LOOKING FWD)

DETAIL H
SCALE 4X
(VIEW LOOKING FWD)

WU 69977



RELEASED
2011-05-24

DESIGN	92	DART AEROSPACE LTD	
DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
CHECKED		DRAWING NO.	REV. A
MFG. APPR.		D206-667-147	SHEET 3 OF 4
APPROVED		TITLE	SCALE
DE APPR.		CROSSTUBE ASS'Y (206L MID FWD)	NTS
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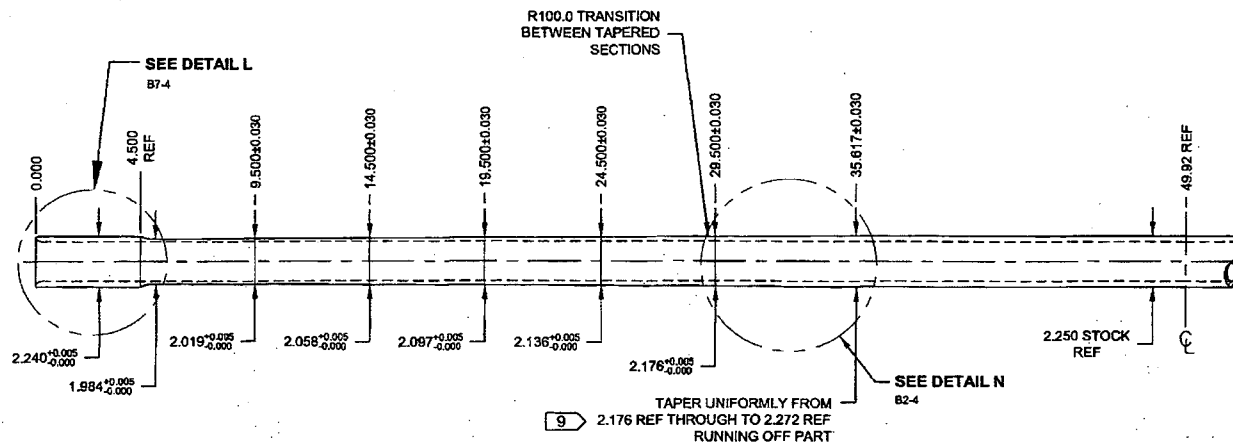
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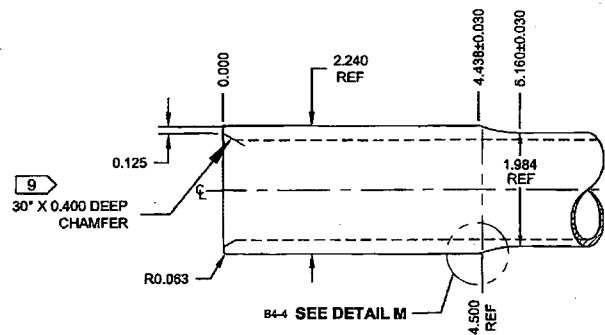
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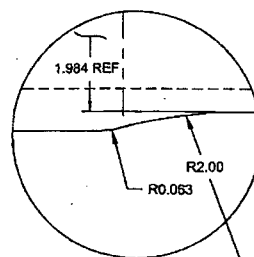
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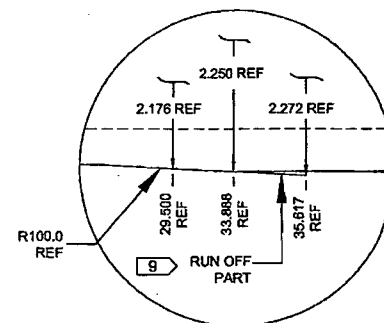
TURNING DETAIL



DETAIL L:
CROSTUBE CUFF
NOT TO SCALE



DETAIL M:
CUFF TRANSITION
NOT TO SCALE



DETAIL N:
TAPER RUN-OFF
NOT TO SCALE

RELEASED
2011-05-23

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DRAWN	92	HAWKESBURY, ONTARIO, CANADA	
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